Contents

Volume 42, Issue 1, February 2005

Editorial

1 R. P. FRECKLETON, P. HULME, P. GILLER & G. KERBY The changing face of applied ecology

Forum

4 P. A. STEPHENS, S. W. BUSKIRK, G. D. HAYWARD & C. MARTÍNEZ DEL RIO Information theory and hypothesis testing: a call for pluralism

Extinction risk and demographic modelling

13 F. SCHLÄPFER, A. B. PFISTERER & B. SCHMID Non-random species extinction and plant production: implications for ecosystem functioning

25 D. MAXWELL & S. JENNINGS Power of monitoring programmes to detect decline and recovery of rare and vulnerable fish

38 M. S. BOYCE, L. L. IRWIN & R. BARKER Demographic meta-analysis: synthesizing vital rates for spotted owls

50 A. M. CINGOLANI, G.A POSSE & M. B. COLLANTES Plant functional traits, herbivore selectivity and response to sheep grazing in Patagonian steppe grasslands

Management of invasives

60 S. M. EMERY & K. L. GROSS Effects of timing of prescribed fire on the demography of an invasive plant, spotted knapweed *Centaurea maculosa*

70 Y. M. BUCKLEY, M. REES, A. W. SHEPPARD & M. J. SMYTH Stable coexistence of an invasive plant and biocontrol agent: a parameterized coupled plant–herbivore model

80 J. R. MUIRHEAD & H. J. MACISAAC Development of inland lakes as hubs in an invasion network

Mammalian ecology

91 T. P. MOORHOUSE & D. W. MACDONALD Indirect negative impacts of radio-collaring: sex-ratio variation in water voles

99 K. L. VIGGERS & J. P. HEARN The kangaroo conundrum: home range studies and implications for land management

108 J. L. HAYWARD, S. M. HENSON, C. J. LOGAN, C. R. PARRIS, M. W. MEYER & B. DENNIS Predicting numbers of hauled-out harbour seals: a mathematical model

118 C. R. BRAKES & R. H. SMITH Exposure of non-target small mammals to rodenticides: short-term effects, recovery and implications for secondary poisoning

Vegetation and habitat management

129 J. S. RENTCH, R. H. FORTNEY, S. L. STEPHENSON, H. S. ADAMS, W. N. GRAFTON & J. T. ANDERSON Vegetation–site relationships of roadside plant communities in West Virginia, USA

139 V. VANDVIK, E. HEEGAARD, I. E. MÅREN & P. A. AARRESTAD Managing heterogeneity: the importance of grazing and environmental variation on post-fire succession in heathlands

150 A. CRUZ-ANGÓN & R. GREENBERG Are epiphytes important for birds in coffee plantations? An experimental assessment

160 J. CUMMINGS, N. REID, I. DAVIES & C. GRANT Adaptive restoration of sand-mined areas for biological conservation

171 F. BARY, A. C. GANGE, M. CRANE & K. J. HAGLEY Fungicide levels and arbuscular mycorrhizal fungi in golf putting greens

181 M. R. CRIST, B. WILMER & G. H. APLET Assessing the value of roadless areas in a conservation reserve strategy: biodiversity and landscape connectivity in the northern Rockies

192 **Editors' Note**

196 **Instructions for Authors**

Volume 42, Issue 2, April 2005

Special profile: River restoration

201 P. S. GILLER River restoration: seeking ecological standards. Editor's introduction

208 M. A. PALMER, E. S. BERNHARDT, J. D. ALLAN, P. S. LAKE, G. ALEXANDER, S. BROOKS, J. CARR, S. CLAYTON, C. N. DAHM, J. FOLLSTAD SHAH, D. L. GALAT, S. G. LOSS, P. GOODWIN, D. D. HART, B. HASSETT, R. JENKINSON, G. M. KONDOLF, R. LAVE, J. L. MEYER, T. K. O'DONNELL, L. PAGANO & E. SUDDUTH Standards for ecologically successful river restoration

218 R. JANSSON, H. BACKX, A. J. BOULTON, M. DIXON, D. DUDGEON, F. M. R. HUGHES, K. NAKAMURA, E. H. STANLEY & K. TOCKNER Stating mechanisms and refining criteria for ecologically successful river restoration: a comment on Palmer *et al.* (2005)

223 S. GILLILAN, K. BOYD, T. HOITSMA & M. KAUFFMAN Challenges in developing and implementing ecological standards for geomorphic river restoration projects: a practitioner's response to Palmer *et al.* (2005)

228 F. LEPORI, D. PALM & B. MALMQVIST Effects of stream restoration on ecosystem functioning: detritus retentiveness and decomposition

239 I. LEYER Predicting plant species' responses to river regulation: the role of water level fluctuations

251 G. J. VAN GEEST, H. COOPS, R. M. M. ROIJACKERS, A. D. BUIJSE & M. SCHEFFER Succession of aquatic vegetation driven by reduced water-level fluctuations in floodplain lakes

Agricultural ecology

261 J. BENGTSSON, J. AHNSTRÖM & A.-C. WEIBULL The effects of organic agriculture on biodiversity and abundance: a meta-analysis

270 M. J. WHITTINGHAM, R. D. SWETNAM, J. D. WILSON, D. E. CHAMBERLAIN & R. P. FRECKLETON Habitat selection by yellowhammers *Emberiza citrinella* on lowland farmland at two spatial scales: implications for conservation management

281 M. H. SCHMIDT, I. ROSCHEWITZ, C. THIES & T. TSCHARNTKE Differential effects of landscape and management on diversity and density of ground-dwelling farmland spiders

288 M. M. VILA-AIUB, P. NEVE, K. J. STEADMAN & S. B. POWLES Ecological fitness of a multiple herbicide-resistant *Lolium rigidum* population: dynamics of seed germination and seedling emergence of resistant and susceptible phenotypes

299 T. A. VAN MOURIK, T. J. STOMPH & A. J. MURDOCH Why high seed densities within buried mesh bags may overestimate depletion rates of soil seed banks

Land use and vegetation ecology

306 S. WIPF, C. RIXEN, M. FISCHER, B. SCHMID & V. STOECKLI Effects of ski piste preparation on alpine vegetation
317 J. EHRLÉN, K. SYRJÄNEN, R. LEIMU, M. B. GARCIA & K. LEHTILÄ Land use and population growth of *Primula veris*: an experimental demographic approach
327 L. M. MARTIN, K. A. MOLONEY & B. J. WILSEY An assessment of grassland restoration success using species diversity components
337 H. ANTONSEN & P. A. OLSSON Relative importance of burning, mowing and species translocation in the restoration of a former boreal hayfield: responses of plant diversity and the microbial community

Applied vertebrate ecology

348 D. RAMSEY Population dynamics of brushtail possums subject to fertility control
361 C. BONENFANT, J.-M. GAILLARD, F. KLEIN & J.-L. HAMANN Can we use the young: female ratio to infer ungulate population dynamics? An empirical test using red deer *Cervus elaphus* as a model
371 A. SEILER Predicting locations of moose–vehicle collisions in Sweden
383 ROBERT G. D'EON & DONNA DELPARTE Effects of radio-collar position and orientation on GPS radio-collar performance, and the implications of PDOP in data screening
389 E. B. NILSEN, T. PETTERSEN, H. GUNDERSEN, J. M. MILNER, A. MYSTERUD, E. J. SOLBERG, H. P. ANDREASSEN & N. C. STENSETH Moose harvesting strategies in the presence of wolves
400 T. G. MARTIN & H. P. POSSINGHAM Predicting the impact of livestock grazing on birds using foraging height data
409 F. M. CLARKE, L. V. ROSTANT & P. A. RACEY Life after logging: post-logging recovery of a neotropical bat community

Volume 42, Issue 3, June 2005

Review

421 P. C. L. WHITE, N. V. JENNINGS, A. R. RENWICK & N. H. L. BARKER Questionnaires in ecology: a review of past use and recommendations for best practice

Harvesting

431 C. J. TAMBLING & J. T. DU TOIT Modelling wildebeest population dynamics: implications of predation and harvesting in a closed system
442 A. M. CALVERT & G. GAUTHIER Effects of exceptional conservation measures on survival and seasonal hunting mortality in greater snow geese
453 H. BRØSETH, J. TUFTO, H. C. PEDERSEN, H. STEEN & L. KASTDALEN Dispersal patterns in a harvested willow ptarmigan population
460 G. COWLISHAW, S. MENDELSON & J. M. ROWCLIFFE Evidence for post-depletion sustainability in a mature bushmeat market

Bird habitat use

469 S. J. BUTLER, R. B. BRADBURY & M. J. WHITTINGHAM Stubble height affects the use of stubble fields by farmland birds
477 P. M. LOURENÇO, J. P. GRANADEIRO & J. M. PALMEIRIM Importance of drainage channels for waders foraging on tidal flats: relevance for the management of estuarine wetlands
487 I. P. VAUGHAN & S. J. ORMEROD Increasing the value of principal components analysis for simplifying ecological data: a case study with rivers and river birds

Vegetation management and restoration

498 R. A. HIRST, R. F. PYWELL, R. H. MARRS & P. D. PUTWAIN The resilience of calcareous and mesotrophic grasslands following disturbance
507 C. J. CURTIS, B. A. EMMETT, H. GRANT, M. KERNAN, B. REYNOLDS & E. SHILLAND Nitrogen saturation in UK moorlands: the critical role of bryophytes and lichens in determining retention of atmospheric N deposition
518 K. HYLANDER Aspect modifies the magnitude of edge effects on bryophyte growth in boreal forests
526 J. E. SMITH, D. MCKAY, G. BRENNER, J. MCIVER & J. W. SPATAFORA Early impacts of forest restoration treatments on the ectomycorrhizal fungal community and fine root biomass in a mixed conifer forest
536 B. HÉRAULT, O. HONNAY & D. THOEN Evaluation of the ecological restoration potential of plant communities in Norway spruce plantations using a life-trait based approach

Invasives

546 G. C. SMITH, I. S. HENDERSON & P. A. ROBERTSON A model of ruddy duck *Oxyura jamaicensis* eradication for the UK
556 E. A. LINDSAY & K. FRENCH Litterfall and nitrogen cycling following invasion by *Chrysanthemoides monilifera* ssp. *rotundata* in coastal Australia
567 J. N. BARNEY, A. DI TOMMASO & L. A. WESTON Differences in invasibility of two contrasting habitats and invasiveness of two mugwort *Artemisia vulgaris* populations

Population monitoring: technical advances

577 M. WHEATLEY, J. T. FISHER, K. LARSEN, J. LITKE & S. BOUTIN Using GIS to relate small mammal abundance and landscape structure at multiple spatial extents: the northern flying squirrel in Alberta, Canada
587 J. D. WOOD, C. E. O'CONNELL-RODWELL & S. L. KLEMPERER Using seismic sensors to detect elephants and other large mammals: a potential census technique
595 W. JI, P. C. L. WHITE & M. N. CLOUT Contact rates between possums revealed by proximity data loggers

Volume 42, Issue 4, August 2005

Review

605 A. B. GILL Offshore renewable energy: ecological implications of generating electricity in the coastal zone
616 M. SØNDERGAARD, E. JEPPESEN, J. P. JENSEN & S. L. AMSINCK Water Framework Directive: ecological classification of Danish lakes

Mammalian ecology

630 A. H. HARCOURT & D. A. DOHERTY Species–area relationships of primates in tropical forest fragments: a global analysis

638 D. THOMPSON, M. LONERGAN & C. DUCK Population dynamics of harbour seals *Phoca vitulina* in England: monitoring growth and catastrophic declines

649 D. B. LINDENMAYER, R. B. CUNNINGHAM & R. PEAKALL The recovery of populations of bush rat *Rattus fuscipes* in forest fragments following major population reduction

Birds and landscapes

659 A. R. CANNON, D. E. CHAMBERLAIN, M. P. TOMS, B. J. HATCHWELL & K. J. GASTON Trends in the use of private gardens by wild birds in Great Britain 1995–2002

672 C. A. LEPCZYK Integrating published data and citizen science to describe bird diversity across a landscape

678 H. P. CREEGAN & P. E. OSBORNE Gap-crossing decisions of woodland songbirds in Scotland: an experimental approach

Wildlife management and disease

688 H. MCCALLUM, L. GERBER & A. JANI Does infectious disease influence the efficacy of marine protected areas? A theoretical framework

699 T. R. GILLESPIE, C. A. CHAPMAN & E. C. GREINER Effects of logging on gastrointestinal parasite infections and infection risk in African primates

708 P. CALEY & J. HONE Assessing the host disease status of wildlife and the implications for disease control: *Mycobacterium bovis* infection in feral ferrets

Measuring and modelling species distribution

720 I. P. VAUGHAN & S. J. ORMEROD The continuing challenges of testing species distribution models

731 O. SKARPAAS, K. SHEA & J. M. BULLOCK Optimizing dispersal study design by Monte Carlo simulation

Plant interactions and spread

740 P. H. THRALL, D. A. MILLSOM, A. C. JEAVONS, M. WAAYERS, G. R. HARVEY, D. J. BAGNALL & J. BROCKWELL Seed inoculation with effective root-nodule bacteria enhances revegetation success

752 S. C. HART, A. T. CLASSEN & R. J. WRIGHT Long-term interval burning alters fine root and mycorrhizal dynamics in a ponderosa pine forest

762 M. G. HUNT & J. A. NEWMAN Reduced herbivore resistance from a novel grass–endophyte association

770 M. WOLTERS, A. GARBUTT & J. P. BAKKER Plant colonization after managed realignment: the relative importance of diaspore dispersal

Volume 42, Issue 5, October 2005

13th BES Lecture

779 D. KING Climate change: the science and the policy

Special profile: climate change

784 P. E. HULME Adapting to climate change: is there scope for ecological management in the face of a global threat?

795 D. GOULSON, L. C. DERWENT, M. E. HANLEY, D. W. DUNN & S. R. ABOLINS Predicting calyptrate fly populations from the weather, and probable consequences of climate change

805 M. GILBERT, S. GUICHARD, J. FREISE, J.-C. GRÉGOIRE, W. HEITLAND, N. STRAW, C. TILBURY & S. AUGUSTIN Forecasting *Cameraria ohridella* invasion dynamics in recently invaded countries: from validation to prediction

814 A. E. COCKE, P. Z. FULÉ & J. E. CROUSE Forest change on a steep mountain gradient after extended fire exclusion: San Francisco Peaks, Arizona, USA

824 F. DE BELLO, J. LEPŠ & M.-T. SEBASTIÀ Predictive value of plant traits to grazing along a climatic gradient in the Mediterranean

834 N. RATCLIFFE, S. SCHMITT & M. WHIFFIN Sink or swim? Viability of a black-tailed godwit population in relation to flooding

Forum

844 M. WOLTERS, J. P. BAKKER, M. D. BERTNESS, R. L. JEFFERIES & I. MÖLLER Saltmarsh erosion and restoration in south-east England: squeezing the evidence requires realignment

Priority contribution

852 R. WOODROFFE, C. A. DONNELLY, W. T. JOHNSTON, F. J. BOURNE, C. L. CHEESEMAN, R. S. CLIFTON-HADLEY, D. R. COX, G. GETTINBY, R. G. HEWINSON, A. M. LE FEVRE, J. P. MCINERNEY & W. I. MORRISON Spatial association of *Mycobacterium bovis* infection in cattle and badgers *Meles meles*

Weed ecology

863 R. HUMSTON, D. A. MORTENSEN & O. N. BJØRNSTAD Anthropogenic forcing on the spatial dynamics of an agricultural weed: the case of the common sunflower

873 I. ROSCHEWITZ, D. GABRIEL, T. TSCHARNTKE & C. THIES The effects of landscape complexity on arable weed species diversity in organic and conventional farming

Fish & fisheries

883 N. K. DULVY, S. JENNINGS, N. B. GOODWIN, A. GRANT & J. D. REYNOLDS Comparison of threat and exploitation status in North-East Atlantic marine populations

892 S. N. KHOA, K. LORENZEN, C. GARAWAY, B. CHAMSINHG, D. SIEBERT & M. RANDONE Impacts of irrigation on fisheries in rain-fed rice-farming landscapes

901 M. DIEKMANN, U. BRÄMICK, R. LEMCKE & T. MEHNER Habitat-specific fishing revealed distinct indicator species in German lowland lake fish communities

Vertebrate population management

910 A. J. NOVARO, M. C. FUNES & R. S. WALKER An empirical test of source–sink dynamics induced by hunting

921 S. E. BAKER, S. A. ELLWOOD, R. WATKINS & D. W. MACDONALD Non-lethal control of wildlife: using chemical repellents as feeding deterrents for the European badger *Meles meles*

Birds & habitats

932 P. W. ATKINSON, R. J. FULLER, J. A. VICKERY, G. J. CONWAY, J. R. B. TALLOWIN, R. E. N. SMITH, K. A. HAYSOM, T. C. INGS, E. J. ASTERAKI & V. K. BROWN Influence of agricultural management, sward structure and food resources on grassland field use by birds in lowland England

943 D. T. BLUMSTEIN, E. FERNÁNDEZ-JURICIC, P. A. ZOLLNER & S. C. GARITY Inter-specific variation in avian responses to human disturbance

Ecological indicators

954 Y. CAO & C. P. HAWKINS Simulating biological impairment to evaluate the accuracy of ecological indicators

966 S. SCHMIDTLEIN Imaging spectroscopy as a tool for mapping Ellenberg indicator values

Plant comunities and large-scale ecology

975 T. G. O'CONNOR Influence of land use on plant community composition and diversity in Highland Sourveld grassland in the southern Drakensberg, South Africa

989 W. VAN DER WERF, G. WOLDEWAHID, A. VAN HUIS, M. BUTROUS & K. SYKORA Plant communities can predict the distribution of solitarious desert locust *Schistocerca gregaria*

998 Editors' Note

Volume 42, Issue 6, December 2006

Priority contribution

999 Z. ARZOUMANIAN, J. HOLMBERG & B. NORMAN An astronomical pattern-matching algorithm for computer-aided identification of whale sharks *Rhincodon typus*

Bayesian methodology

1012 M. A. MCCARTHY & P. MASTERS Profiting from prior information in Bayesian analyses of ecological data

Invasives: mitigation and management

1020 Y. M. BUCKLEY, E. BROCKERHOFF, L. LANGER, N. LEDGARD, H. NORTH & M. REES Slowing down a pine invasion despite uncertainty in demography and dispersal

1031 P. MANNING, P. D. PUTWAIN & N. R. WEBB Formulating a general statistical model for *Betula* spp. invasion of lowland heath ecosystems

1042 J. MÜLLEROVÁ, P. PYŠEK, V. JAROŠÍK & J. PERGL Aerial photographs as a tool for assessing the regional dynamics of the invasive plant species *Heracleum mantegazzianum*

1054 Q. PAYNTER Evaluating the impact of a biological control agent Carmenta mimosa on the woody wetland weed *Mimosa pigra* in Australia

1063 F. BULLERI & L. AIROLDI Artificial marine structures facilitate the spread of a non-indigenous green alga, *Codium fragile* ssp. *tomentosoides*, in the north Adriatic Sea

1073 S. M. PROBER, K. R. THIELE, I. D. LUNT & T. B. KOEN Restoring ecological function in temperate grassy woodlands: manipulating soil nutrients, exotic annuals and native perennial grasses through carbon supplements and spring burns

1086 D. A. P. HOOFTMAN, J. G. B. OOSTERMEIJER, M. M. J. JACOBS & H. C. M. DEN NIJS Demographic vital rates determine the performance advantage of crop–wild hybrids in lettuce

Modelling methodology

1096 S. O'BRIEN, B. ROBERT & H. TIANDRY Consequences of violating the recapture duration assumption of mark–recapture models: a test using simulated and empirical data from an endangered tortoise population

1105 D. I. MACKENZIE & J. A. ROYLE Designing occupancy studies: general advice and allocating survey effort

1115 Z. MÜNZBERGOVÁ & J. EHRLÉN How best to collect demographic data for population viability analysis models

1121 P. COUTERON, R. PELISSIER, E. A. NICOLINI & D. PAGET Predicting tropical forest stand structure parameters from Fourier transform of very high-resolution remotely sensed canopy images

Arthropods in agriculture

1129 O. SCHWEIGER, J. P. MAELFAIT, W. VAN WINGERDEN, F. HENDRICKX, R. BILLETER, M. SPEELMANS, I. AUGENSTEIN, B. AUKEMA, S. AVIRON, D. BAILEY, R. BUKACEK, F. BUREL, T. DIEKÖTTER, J. DIRKSEN, M. FRENZEL, F. HERZOG, J. LIIRA, M. ROUBALOVA & R. BUGTER Quantifying the impact of environmental factors on arthropod communities in agricultural landscapes across organizational levels and spatial scales

1140 J. M. HOLLAND, C. F. G. THOMAS, T. BIRKETT, S. SOUTHWAY & H. OATEN Farm-scale spatiotemporal dynamics of predatory beetles in arable crops

Land-use and management

1153 P. EGGLETON, A. J. VANBERGEN, D. T. JONES, M. C. LAMBERT, C. ROCKETT, P. M. HAMMOND, J. BECCALONI, D. MARRIOTT, E. ROSS & A. GIUSTI Assemblages of soil macrofauna across a Scottish land-use intensification gradient: influences of habitat quality, heterogeneity and area

1165 E. HOOPER, P. LEGENDRE & R. CONDIT Barriers to forest regeneration of deforested and abandoned land in Panama

1175 N. W. SITATI, M. J. WALPOLE & N. LEADER-WILLIAMS Factors affecting susceptibility of farms to crop raiding by African elephants: using a predictive model to mitigate conflict

1183 P. LAIOLO & J. L. TELLA Habitat fragmentation affects culture transmission: patterns of song matching in Dupont's lark

Harvesting and management

1194 M. ÅSTRÖM, M. DYNESIUS, K. HYLANDER & C. NILSSON Effects of slash harvest on bryophytes and vascular plants in southern boreal forest clear-cuts

1203 C. BIEBER & T. RUF Population dynamics in wild boar *Sus scrofa*: ecology, elasticity of growth rate and implications for the management of pulsed resource consumers

1214 Erratum

1215 Index